

REMARKS

The Office Action mailed on March 22, 2006 has been given careful consideration by applicant. Reconsideration of the application is respectfully requested in view of the comments herein.

The Office Action

Claims 1, 25, and 26 are rejected under 35 U.S.C. §102(e) as being anticipated by Baatz et al (US 6,832,002).

Claim 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Shafarenko (IEEE Transactions on Image Processing, Vol. 7, No. 9, September 1998).

Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen (US 5,809,165).

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Shafarenko.

Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Bradski (US 6,647,131).

Claims 6, 7, and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Herley (US Pub. No. 2002/0146173).

Claims 9, 10, 11, and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Herley.

Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Herley and in further view of Shafarenko.

Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al.

Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Shafarenko.

Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Bradski.

Claims 17, 18, 19, 20, and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Herley.

Claims 23 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable

over Graham, et al. (US 6,832,002) in view of Baatz et al.

Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Graham et al. in view of Baatz et al. and in further view of Venable (US 5,861,871).

The Anticipation Rejections

The Examiner has rejected claims 1, 25, and 26 under 35 U.S.C. §102(e) as being anticipated by Baatz et al (US 6,832,002). This rejection should be withdrawn for at least the following reasons. Baatz et al. does not teach or suggest each and every element as set forth in the subject claims.

Independent claim 1 (and dependent claims 25 and 26) recites detecting sweep segment information (information related to uniformly changing color) from one or more color channel histograms of a graphics image and segmenting the graphics image into sweep (uniformly changing color) and non-sweep (uniform color) areas using the sweep segment information. Baatz, et al. does not teach or suggest such claimed aspects. Instead, Baatz, et al. teaches determining if contiguous picture objects (pixels or segments) are conforming/similar based on homogeneity criterion and merging conforming picture objects together to create new picture objects until there are no further conforming contiguous picture objects. (See Abstract).

More particularly, Baatz, et al. discloses a step S100 in which a homogeneity criterion that defines a picture object conformance condition is selected. (See col. 9, ll. 14-18). Such criterion includes an inequality with color mean values that describes the conformity or similarity of two contiguous picture objects based on a tolerance. (See col. 9, ll. 48-61). In a step S110, the matching technique (e.g., simple matching, best matching, mutual best matching, or global best matching) is selected. (See col. 9, ll. 18-22). In a step S120, a tolerance for the homogeneity criterion is selected. (See col. 9, ll. 22-27). In a step S130, a picture object(s) is selected (See col. 13, ll. 52-53), and in a step S140 it is determined whether the selected and a contiguous picture are conforming based on a difference in feature values therebetween (See col. 14, ll. 6-13).

If the picture objects are deemed conforming, then in a step S150 the picture objects are merged to form a new picture object. (See col. 14, ll. 15-19, and Figure 2). Otherwise, the picture objects are not merged. In either instance, if there are no more picture objects (determined in a step S160), a stable condition exists in which no further contiguous picture objects are conforming (determined in a step S170), and no further

planes to process over (determined in a step S180), then the method is completed. (See col. 14, ll. 30-51). Hence, Baatz, et al. teaches comparing contiguous pixel objects via color mean or other criterion and merging pixel objects to form new pixel objects when the color means of contiguous pixel objects fall within a predetermined tolerance. However, Baatz, et al. does not teach or suggest detecting sweep segment information from one or more color channel histograms of a graphics image and segmenting the graphics image into sweep areas using the sweep segment information as recited in the subject claims.

The Examiner references column 18, lines 1-12, and column 17, lines 1-17, of Baatz, et al. as support to an assertion that Baatz, et al. teaches detecting color sweeps and column 12, lines 45-67, as support that Baatz, et al. teaches segmenting graphics into sweep and non-sweep areas based on the color sweep information. However, these sections of Baatz et al. do not teach or suggest such claimed aspects. Instead, column 18, lines 1-12, discloses processing homogeneity criterion for a picture consisting of several single pictures having different information content; column 17, lines 1-17, discloses determining a pertinence of a boundary picture object in which the homogeneity criterion is already satisfied with already merged picture objects and allocating it to one picture object where the boundary picture object occurs most frequently; and column 12, lines 45-67, discloses homogeneity criterion for merging picture objects for picture regions having continuous color transitions over a regression line. However, none of these sections teaches or suggests detecting sweep segment information from one or more color channel histograms of a graphics image and segmenting the graphics image into sweep and non-sweep areas using the sweep segment information as recited in the subject claims.

Claim 25 further recites the sweep area is an area of uniformly changing colors and a non-sweep area is an area of uniform colors. The Examiner asserts column 12, lines 45-50, and column 9, lines 48-67, of Baatz et al. teach such aspects. However, these sections of Baatz et al. do not teach or suggest these claimed aspects. As discussed above, column 12, lines 45-50, merely discloses homogeneity criterion for merging picture objects for picture regions having continuous color transitions (not areas of uniformly changing colors) over a regression line. This section of Baatz et al. is silent regarding areas of uniformly changing colors as recited in the subject claim. Also discussed above, column 9, lines 48-67 merely discloses homogeneity criterion that

includes an inequality with color mean values that describe the similarity of two contiguous picture objects based on a tolerance.

Claim 26 further recites that the one or more color channel histograms include a plurality of colors. The Examiner asserts column 18, lines 20-25 teach such aspects. However, this section does not teach or suggest the subject claim. Rather, this section of Baatz et al. discloses averaging the differences of features of picture objects determined by the homogeneity criterion for each channel/single picture as a quality criterion for all pictures. (See col. 18, ll. 4-9, which defines channel as a picture). This section of Baatz et al. does not contemplate one or more color channel histograms with a plurality of colors as recited in the subject claim.

In view of the above, it is readily apparent that Baatz et al. does not teach or suggest each and every element in the subject claims. Therefore, it is respectfully requested that the rejection of claims 1, 25, and 26 be withdrawn.

The Obviousness Rejections

The Examiner has rejected claim 2 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Shafarenko (IEEE Transactions on Image Processing, Vol. 7, No. 9, September 1998). This rejection should be withdrawn for at least the following reasons. Claim 2 depends from independent claim 1 and Shafarenko does not make up for the aforementioned deficiencies of Baatz et al. with respect to claim 1 as discussed *supra*. Rather, Shafarenko disclose a technique that uses a watershed algorithm to segment 2D or 3D color histograms of an image in which segmentation must take place in a "uniform color space." (See Abstract). This is contrary to the claimed invention in which uniformly changing (not uniform) color portions in an image are detected and segmented. In view of the above, it is respectfully requested that this rejection should be withdrawn.

The Examiner has rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen (US 5,809,165). This rejection should be withdrawn for at least the following reasons. Claim 3 depends from independent claim 1 and Massen does not make up for the aforementioned deficiencies of Baatz et al. as discussed *supra* with respect to claim 1. Instead, Massen teaches color control in the production process via calculating from signals supplied by color sensitive image-forming sensors one or several multidimensional histograms of color vector components

and deriving color measures from the comparison of the histograms. (See Abstract). Accordingly, this rejection should be withdrawn.

The Examiner has rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Shafarenko. This rejection should be withdrawn for at least the following reasons. Claim 4 depends from independent claim 1 and Massen and/or Shafarenko fail to make up for the aforementioned deficiencies of Baatz et al. with respect to claim 1. Accordingly, this rejection should be withdrawn.

The Examiner has rejected claim 5 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Bradski (US 6,647,131). This rejection should be withdrawn for at least the following reasons. Claim 5 depends from independent claim 1 and Massen and/or Bradski do not make up for the aforementioned deficiencies of Baatz et al. Bradski merely teaches detecting motion by generating a motion region image of an object, obtaining associated normal gradients, using the gradients to remove erroneous data, and using remaining gradients to identify motion. (See Abstract). Therefore, this rejection should be withdrawn.

The Examiner has rejected claims 6, 7, and 8 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Massen and further in view of Herley (US Pub. No. 2002/0146173). This rejection should be withdrawn for at least the following reasons. Claims 6, 7, and 8 depend from independent claim 1 and Massen and/or Herley fail to make up for the aforementioned deficiencies of Baatz et al. Herley discloses a technique for automatically detecting object boundaries in a digital image in which one or more boundaries obtained from analyzing an edge map are assigned to respective objects based on a set of rules. (See Abstract). Accordingly, this rejection should be withdrawn.

The Examiner has rejected claims 9, 10, 11, and 12 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Herley. This rejection should be withdrawn for at least the following reasons. Claims 9, 10, 11, and 12 depend from independent claim 1 and Herley fail to make up for the aforementioned deficiencies of Baatz et al. Thus, this rejection should be withdrawn.

The Examiner has rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over Baatz et al. in view of Herley and in further view of Shafarenko. This rejection should be withdrawn for at least the following reasons. Claim 13 depends

from independent claim 1 and Herley and/or Shafarenko do not make up for the aforementioned deficiencies of Baatz et al. Accordingly, this rejection should be withdrawn.

The Examiner has rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. This rejection should be withdrawn for at least the following reasons. Massen in view of Baatz et al. does not teach or suggest each and every element as set forth in the subject claim. In particular, similar to independent claim 1, independent claim 14 recites detecting sweep segment information (information related to uniformly changing color) from one or more color channel histograms of a graphics image and segmenting the graphics image into sweep (uniformly changing color) and non-sweep (uniform color) areas using the sweep segment information. As discussed *supra*, Massen and Baatz et al., individually and in combination, do not teach or suggest such aspects. Therefore, this rejection should be withdrawn.

The Examiner has rejected claim 15 under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Shafarenko. This rejection should be withdrawn for at least the following reasons. Claim 15 depends from independent claim 14 and Shafarenko does not make up for the aforementioned deficiencies of Massen in view of Baatz et al. Accordingly, this rejection should be withdrawn.

The Examiner has rejected claim 16 under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Bradski. This rejection should be withdrawn for at least the following reasons. Claim 16 depends from independent claim 14 and Bradski fails to make up for the aforementioned deficiencies of Massen in view of Baatz et al. Therefore, this rejection should be withdrawn.

The Examiner has rejected claims 17, 18, 19, 20, and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Massen in view of Baatz et al. and in further view of Herley. This rejection should be withdrawn for at least the following reasons. Claims 17-21 depend from independent claim 14 and Bradski does not make up for the deficiencies of the combination of Massen in view of Baatz et al. as discussed above. Therefore, the rejection of claims 17-21 should be withdrawn.

The Examiner has rejected claims 23 and 27 under 35 U.S.C. §103(a) as being

unpatentable over Graham, et al. (US 6,832,002) in view of Baatz et al. This rejection should be withdrawn for at least the following reasons. Graham et al. in view of Baatz et al. does not teach or suggest the subject claims. Independent claim 23 recites projecting an image represented in a color space into a plurality of planes, detecting curves in each plane, identifying pixels of the color associated with each detected curve and storing such pixel information, and combining the pixel information for each color to determine if pixels of that color are part of a sweep. Graham, et al. does not contemplate identifying areas of uniformly changing color and, thus, cannot teach determining if pixels of a color are part of a sweep. Graham et al. instead teaches identifying areas of related color (not areas of uniform color and areas of uniformly changing color) in electronically captured spot color images and replacing the related colors within an area with a single dominant color representative of the area. (See Abstract). Claim 27 depends from independent claim 23 and, thus, the combination of Baatz et al. and Graham, et al. does not teach or suggest claim 27 for at least the same reasons. Accordingly, the rejection of claims 23 and 27 should be withdrawn.

The Examiner has rejected claim 28 under 35 U.S.C. §103(a) as being unpatentable Graham et al. in view of Baatz et al. and in further view of Venable (US 5,861,871). This rejection should be withdrawn for at least the following reasons. Claim 28 depends from independent claim 23 and Venable fails to make up for the aforementioned deficiencies of Graham in view of Baatz et al. Venable disclose an image editor for an image processing system with a predefined set of system colors. Color pixel color index values for an image to be edited are stored in an image buffer. A color lookup register bank stores color values in respective registers for a predefined set of system colors. Each buffer index value corresponds to a lookup register having the specified color value. The image is thus displayed by indexing the image pixels to the lookup register bank for the color signal inputs to the display. (See Abstract). However, Venable does not teach or suggest projecting an image represented in a color space into a plurality of planes, detecting curves in each plane, identifying pixels of the color associated with each detected curve and storing such pixel information, and combining the pixel information for each color to determine if pixels of that color are part of a sweep as recited in the subject claim. Thus, this rejection should be withdrawn.

Claim Objections

Applicant acknowledges with appreciation the Examiner's indication that claims 22 and 24 would be allowable if recast in independent form to include the limitations of respective base claims and intervening claims. However, it is believed that the comments above place the application in condition for allowance. Applicant reserves the right to recast the subject claims at a later date, if needed.

CONCLUSION

For the reasons detailed above, it is respectfully submitted that all claims (1-28) remaining in the application are in condition for allowance.

Respectfully submitted,

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May 1, 2006
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